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## Primary or Power State Standards:

Write the most important key standards all students need to master.

A-SSE.1. Interpret expressions that represent a quantity in terms of its context.

**A.CED.3** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

## Secondary State Standards:

Write the standards that will also be covered in the course of completing the unit.

N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

N-Q.2. Define appropriate quantities for the purpose of *descriptive modeling.*

N-Q.3. Choose a level of accuracy appropriate to *limitations on measurement* *when reporting quantities.*

A-SSE.1. Interpret expressions that represent a *quantity in terms of its context*

1. Interpret parts of an expression, such as terms, factors, and coefficients.

A-CED.1. Create equations and inequalities *in one variable* and use them to solve problems. *Include equations arising from linear and ~~quadratic functions~~, and ~~simple rational~~ and exponential functions.*

A-CED.2. Create equations *in two or more variables* to represent relationships between quantities; graph equations *on coordinate axes with labels and scales*

A-CED.4. Rearrange formulas to highlight a quantity of interest, *using the same reasoning as in solving equations*. *For example, rearrange Ohm’s law V = IR to highlight resistance R.*

# Big Ideas (ENDURING UNDERSTANDINGS)

* Identify the vocabulary for the parts that make up the whole expression. Interpret their meaning in terms of a context.
* Solve word problems where quantities are given in different units that must be converted to understand the problem.
* Select appropriate units for a specific formula and interpret the meaning of the unit in that context.
* Create linear and exponential equations and inequalities in one variable and use them in a contextual situation to solve problems.
* Recognize that exponential functions can be used to model situations of growth, including the growth of an investment through compound interest.
* Create equations in two or more variables to represent relationships between quantities.
* Graph equations in two variables on a coordinate plane and label the axes and scales.
* Write and use a system of equations and/or inequalities to solve a real world problem.
* Solve multi-variable formulas or literal equations for a specific variable in a linear expression.

**Skills to Maintain**

* Using the Pythagorean Theorem
* Understanding slope as a rate of change of one quantity in relation to another quantity
* Interpreting a graph
* Creating a table of values
* Working with functions
* Writing a linear equation
* Using inverse operations to isolate variables and solve equations
* Maintaining order of operations
* Understanding notation for inequalities
* Being able to read and write inequality symbols
* Graphing equations and inequalities on the coordinate plane
* Understanding and using properties of exponents
* Graphing points
* Choosing appropriate scales and labeling a graph

**Essential Questions**

* How do you interpret units in the context of the problem?
* How can you convert units of measure using dimensional analysis?
* How do you choose the appropriate units for a specific formula and interpret the meaning of the unit in that context?
* What criteria is appropriate to choose and interpret both the scale and the origin in graphs and data displays?
* How do you determine the accuracy of values based on their limitations in the context of the situation?
* How do we decompose expressions and make sense of the multiple factors and terms by explaining the meaning of the individual parts?
* What methods are used to create linear and exponential equations and inequalities in one variable and use them in a contextual situation to solve problems?
* How do you create and graph equations in two variables on a coordinate plane and label the axes and scales?
* How can you write and use a system of equations and/or inequalities to solve a real world problem?
* How do we solve multi-variable formulas or literal equations, for a specific variable?

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